

## PSX 1650

### Tripowered, 16/20-Channel Processor-Controlled Mixer/Amplifier

- 16 phantom-powered mic inputs and 20 line inputs configured in 12 mono- and four stereo-input channels, each channel with a four-band EQ
- Two separate stereo digital-effects processors, providing a total of 80 reverb, delay, chorus and pitch-shift programs
- Three power amplifiers utilizing EV/Dynacord's PCA processor-controlled amplifier circuitry for audibly superior sound quality and system protection
- Separate tape record and playback controls, an additional stereo line input and output and a complete patch bay allow extensive signal routing
- Three-year warranty

#### SPECIFICATIONS

##### Conditions:

1. 0 dBV = 1 volt rms.
2. Power ratings are for each channel, all operating, unless noted.
3. 120-volt ac line voltage.

##### Power Output,

##### Left and Right Master Amplifiers,

##### 4 Ohms:

400 watts

##### 8 Ohms:

300 watts

##### Monitor Amplifier,

##### 2-Ohm Load:

200 watts

##### 4-Ohm Load:

160 watts

##### Frequency Response,

##### Power Amplifier:

8-28,000 Hz

##### Mixer:

8-44,000 Hz

##### Total Harmonic Distortion,

##### Main Power Amplifiers (at rated power

with a 4-ohm load, 1 kHz):

<0.04%

##### Monitor Power Amplifier (at rated power

with a 2-ohm load, 1 kHz):

<0.06%

##### Mixer (at 7 dBV, 20 - 20,000 Hz):

<0.08%

##### Noise,

##### Power Amplifier (residual at speaker

output with all faders down):

-93 dBA

##### Mixer:

-121 dBA equivalent input noise (EIN),  
microphone input with 200-ohm  
termination

##### Microphone Inputs,

##### Number:

Sixteen

##### Type/Connector:

Low impedance, balanced,  
3-pin XLR type

##### Polarity:

Pin 2 positive

##### Input Impedance:

2.9 kilohms at 1 kHz

##### Maximum Input Level:

-2 dBV (0.780 volts)

##### Peak Indicator Threshold:

-10 dBV (0.310 volts) at minimum gain

##### Line Inputs,

##### Number:

Twelve mono; four stereo

##### Type/Connector:

High impedance, unbalanced, 1/4-inch  
phone jacks

##### Polarity:

Tip positive

##### Input Impedance:

36 kilohms at 1 kHz

##### Maximum Input Level:

+18 dBV (7.6 volts)

##### Input Channel Equalization:

±15-dB low cut/boost centered at 50 Hz;  
±10-dB low-mid cut/boost centered at 250 Hz;  
±10-dB high-mid cut/boost centered at 2.5 kHz;  
±15-dB high cut/boost centered at 15 kHz

##### Power Amp Inserts (break jacks):

1/4-inch phone-plug sends and returns

##### Effects 1/Line/Tape Inputs,

##### Type/Connector:

High impedance, unbalanced, 1/4-inch  
phone or RCA-type phono jacks

##### Polarity:

Tip positive

##### Input Impedance,

##### Line/Tape:

47 kilohms

##### Effects:

18 kilohms

##### Maximum Voltage Gain (±3 dB),

##### Mic Input to Speaker Output:

88 dB

##### Line Input to Speaker Output:

70 dB

##### Mic Input to Monitor Speaker Output:

84 dB

##### Mic Input to Master Break Send:

56 dB

##### Line Input to Master Break Send:

38 dB

##### Line Input to Monitor Speaker Output:

66 dB

##### Mic Input to Line Output:

58 dB

##### Mic Input to Effects 1 Send:

58 dB

##### Line Input to Effects 1 Send:

40 dB

##### Line Input to Line Output:

40 dB

##### Mic Input to Tape Record Output:

54 dB

##### Line Input to Tape Record Output:

36 dB

##### Line Input to Master Break Send:

10 dB

##### Effects 1 Return to Master Break Send:

4 dB

##### Tape Input to Master Break Send:

14 dB

##### Mic Input to Headphone Output:

65 dB

##### Line Input to Headphone Output:

47 dB

##### Crosstalk (1 kHz),

##### Adjacent Inputs:

-79 dB

##### Input to Output:

-81 dB

##### Phantom Power:

+48 Volts dc at pins 2 and 3 on mic  
connector

FIGURE 1 — PSX 1650 Overall Dimensions

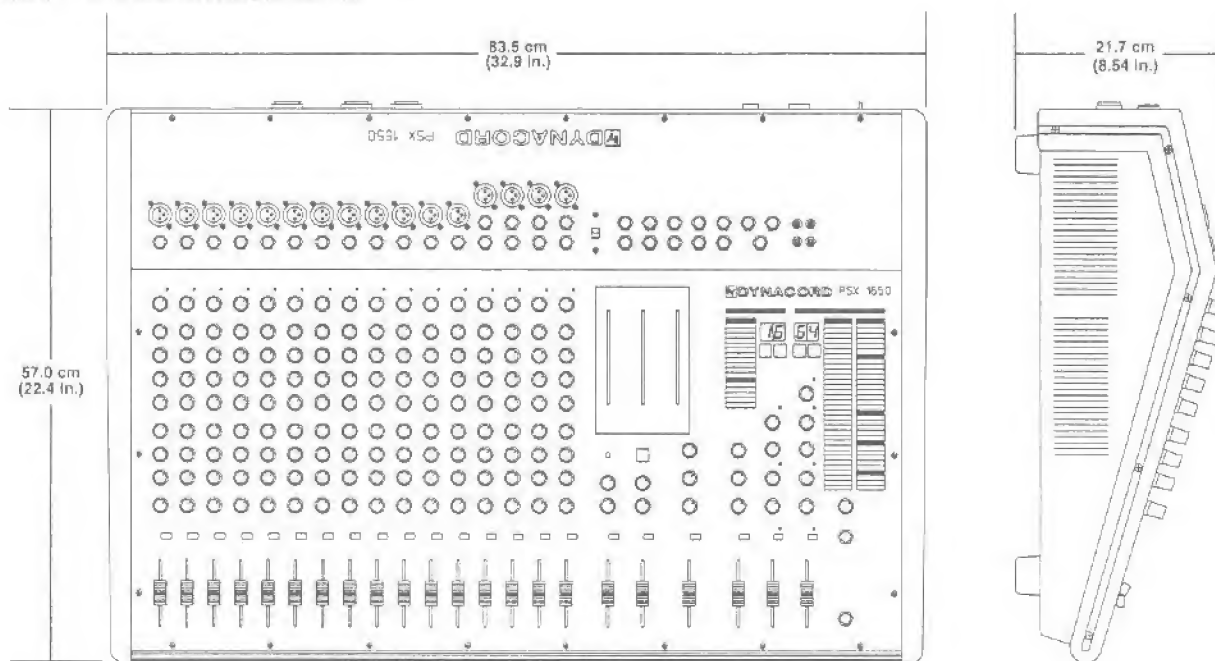


FIGURE 2 — PSX 1650 Panel Drawing

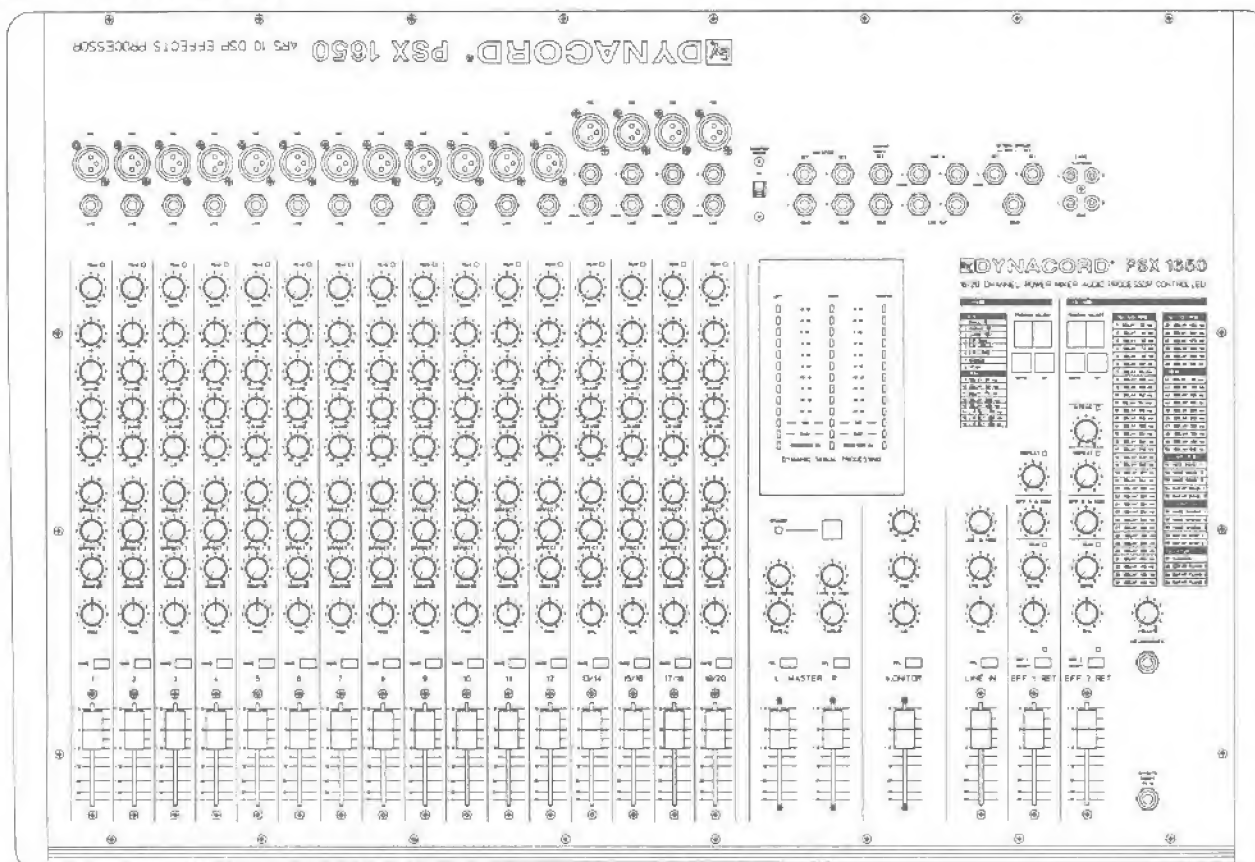
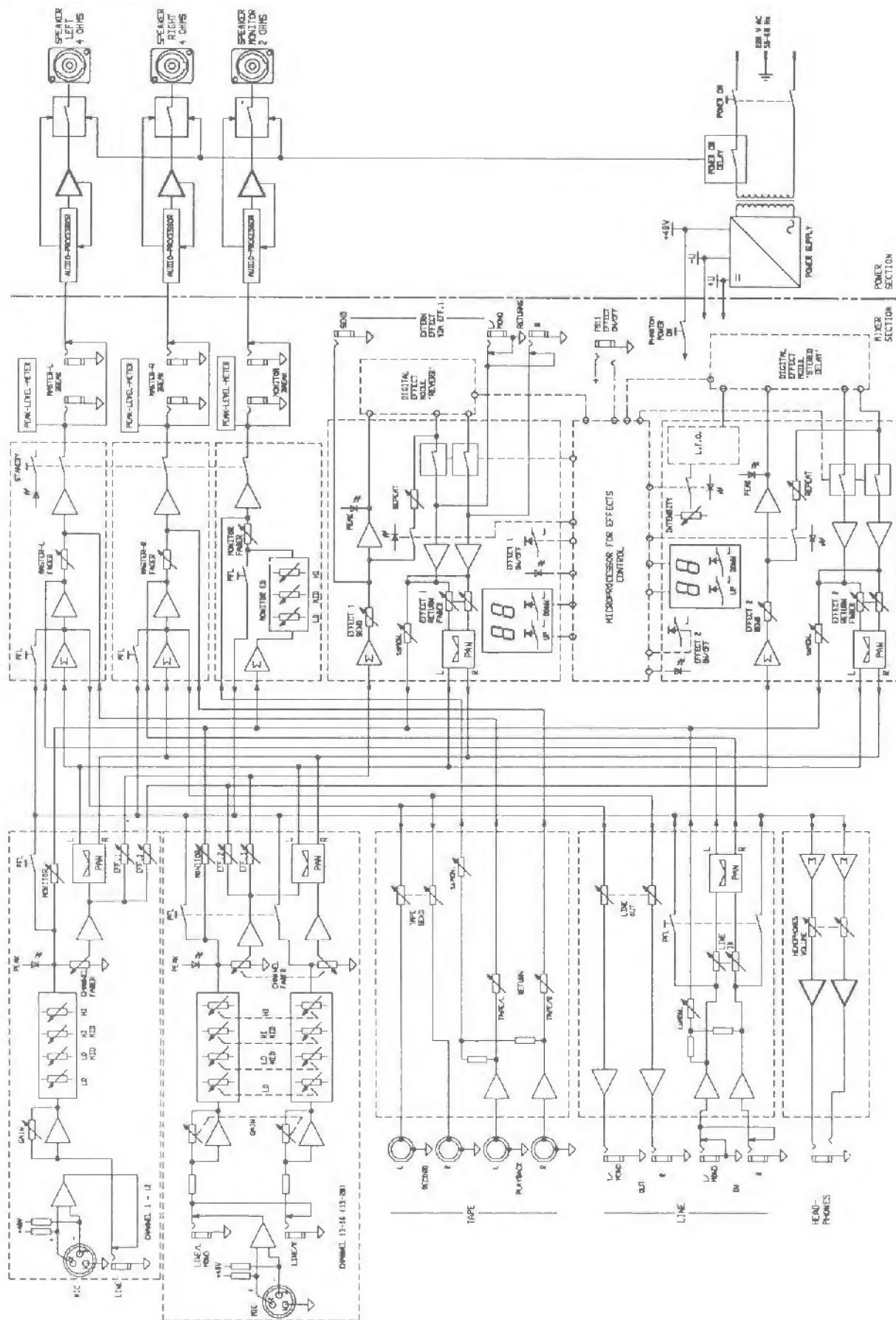


FIGURE 3 — PSX 1650 Block Diagram



## Digital Effects Processors,

### Effects 1:

16 user-selectable stereo programs

### Effects 2:

64 stereo effects programs

### "Busy" Indicators:

An LED on each channel's output display illuminates when the limiter circuit is activated by clipping or current limiting

### "TBC" Indicators:

An LED on each channel's output display illuminates when the limiter circuit is triggered by the thermal overload voice-coil mode

### Standby Switch:

An LED in the master section flashes to show this function is on

### Power Requirements:

115/230 V ac, 50/60 Hz, 2,600 watts

### Dimensions (see Figure 1),

Height: 21.7 cm (8.54 in.)

Width: 83.5 cm (32.9 in.)

Depth: 57.0 cm (22.4 in.)

### Net Weight:

32.0 kg (70.5 lb)

### Shipping Weight:

38.6 kg (85 lb)

## DESCRIPTION

The EV/Dynacord PSX 1650 is a high-performance, tripowered mixer/amplifier that offers the performance of sophisticated separate audio components in a single chassis. Its ease of handling and operation coupled with its high performance make it perfect for a wide range of exacting audio applications.

The amplifiers of the PSX 1650 utilize EV/Dynacord's proprietary PCA amplifier technology. The amplifiers contain unique audio circuits designed to make any speaker system sound its best, prevent amplifier clipping and ensure that speakers are protected against voice-coil burnout. The three high-power MOSFET amplifiers, in combination with the large, heavy-duty power supply and proprietary Dynamic Signal Processing™ (DSP) circuitry, give the PSX 1650 stronger speaker-playing ability than its power ratings would suggest. Neutrik Speakon® output connectors are used to ensure loss-free transfer of signal and maximum safety and reliability. In addition to its 400-watt stereo main amplifiers, there is a 200-watt mono monitor amplifier that is designed to work into low impedances so that several monitor speakers may be connected in parallel for complete stage coverage.

The mixer section of the PSX 1650 has twelve mono mic/line input channels and four stereo line/mono mic input channels. The stereo input channels allow connection of stereo sources like keyboards, drum machines and tape decks while using up only one input channel. All channels are equipped with a gain control with peak LED, four-band EQ, two post-fader sends (one for effects 1 and one for effects 2), one pre-fader send for monitors, a pan or balance control and a 60-mm fader. The sixteen mic inputs have universal 48-volt phantom power.

The master section is equipped very comprehensively with separate control functions for tape playback and record, connection for additional external stereo effects units and a separately controllable stereo aux/line input and output for even more flexibility. The effects 1 and 2 returns are on faders to facilitate mixing. The monitor section includes a three-band EQ and a fader control for its output. A large, 10-segment LED ladder and processor monitors for each channel and the monitor amplifier allow the status and output to be easily checked.

The effects section is equipped with two 16-bit digital stereo reverb/delay modules based on the Dynacord-developed ARS-10 very-large-scale integrated circuit (VLSIC). The effects units create extremely natural-sounding stereo reverbs, delays, echoes and a stereo chorus program specially structured for vocals, brass and woodwinds. The number of echo repeats is controllable from the front panel.

The compact PSX 1650, with its superior amplifier technology, clean and quiet mixer circuitry and brilliant digital stereo effects is a state-of-the-art integrated mixer/amplifier.

The PSX 1650 block diagram is shown in Figure 3. Controls and inputs are shown in Figure 2.

## ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The powered mixer shall be a three-channel model of solid-state design and capable of operating from a 115/230-volt, 50/60-Hz ac line.

The mixer section shall include sixteen input channels: 12 mono mic/line and four mono mic/stereo line. All mic inputs shall be phantom-powerable, 3-pin XLR-type connectors. All line inputs shall be 1/4-inch unbalanced connectors. The input channels shall have the following features: a gain control with a peak LED, four-band equalization, two post-fader and one pre-fader sends, a pan or balance control, pre-fader listen (PFL) and a 60-mm fader. All controls and faders shall be made by Alps. The mixer shall have an additional stereo line input and output and the effects and aux returns shall be controlled by 60-mm faders. The monitor section shall include a three-band EQ and a separate fader to control its output. The mixer shall have front-panel-controlled tape record and playback controls and RCA-type phono connectors for these functions.

The mixer section shall meet the following performance criteria: distortion shall be less than 0.08% THD at +7 dBV from 20-20,000 Hz; equivalent input noise -121 dBA and frequency response of 8 Hz to 44 kHz.

The power amplifiers shall utilize high-power MOSFET output devices and meet the following performance criteria: main amplifiers rated output power of 400 watts per channel into 4 ohms at less than 0.04% THD at 1 kHz, and 300 watts per channel into 8 ohms; monitor amplifier rated output power of 200 watts into 2 ohms

at less than 0.06% THD at 1 kHz, and 160 watts into 4 ohms. The amplifiers shall include a low-pass network with a second-order shelving EQ to improve the phase characteristics of the speakers connected to them. The amplifiers shall include fast-acting limiter circuits to prevent excessive overdrive. The amplifiers shall include a loudspeaker voice-coil modeling circuit connected to the limiter circuits to prevent overheating. The amplifier outputs shall be Neutrik Speakon® NL-4FC.

The powered mixer shall have two 16-bit digital stereo effects units: one with 16 high-quality programs comprised of eight delay programs, three reverb programs, three echo/reverb programs, a chorus program and a pitch-shift program. The second shall include 64 high-quality programs comprised of 50 delay, five doubler, five chorus and four flanger programs.

Dimensions: 21.7 cm (8.54 in.) X 83.5 cm (32.9 in.) X 57.0 cm (22.4 in.) HxWxD. Net weight: 32.0 kg (70.5 lb).

The stereo powered mixer shall be the EV/ Dynacord PSX 1650.

## WARRANTY (Limited)

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. Exclusions and Limitations: The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. Obtaining Warranty Service: To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831 or 800/234-6831) and/or Electro-Voice West, at 8234 Doe Avenue, Visalia, CA 93291 (209/651-7777 or 800/825-1242). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Electro-Voice and EV/Dynacord Electronics are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (616/695-6831 or 800/234-6831).

Specifications subject to change without notice.



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